AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for recording analog signals and digitally encoded information associated with primary devices of an electric power system and secondary devices associated with the electric power system, the method comprising:

receiving a plurality of analog output signals from corresponding transducers of the electric power system;

receiving a plurality of ON/OFF status signals from the primary and secondary devices of the electric power system;

receiving at least one of a time-synchronization analog signal from a time synchronization source and a time-synchronization data packet from the time synchronization source over a communication medium;

maintaining an internal clock synchronized with the synchronization source for time synchronization;

sampling and digitizing the plurality of analog output signals to generate digitized analog output signals;

monitoring at least one of a status and a change of status of the plurality of ON/OFF status signals;

receiving digitally encoded information signals originating in the primary and secondary devices as incoming data packets from a substation protection and control communication network via a communication port;

decoding and analyzing the incoming data packets;

analyzing both the plurality of analog output signals and digitally encoded information signals using a triggering algorithm; and

storing the digitized analog output signals and digitally encoded information signals together with corresponding timing information in a record as fault and sequence of events records in a non-volatile memory storage medium of a hosting device.

2. (Previously presented) The method of claim 1, wherein at least one digitally encoded information signal related to at least one of the electric power system and the secondary devices is recorded.

3. (Original) The method of claim 1, wherein the receiving digitally encoded information signals includes independently time tagging each incoming data packet for the record.

4. (Previously presented) The method of claim 1, wherein reception of the digitally encoded information signals is recorded even if the incoming data packet is corrupted.

5. (Original) The method of claim 1, wherein copies of a same incoming data packet are recorded if at least one of a re-transmit and an auto-repeat scheme is in place.

6. (Original) The method of claim 1, wherein the incoming data packets are encrypted packets recorded in their original encrypted form.

7. (Original) The method of claim 6, wherein the encrypted packets are deciphered from their original encrypted form in real-time and stored in a decrypted form.

8. (Previously presented) The method of claim 1, wherein auxiliary information contained in the data packet includes at least one of a cyclic redundancy check and sequence numbers and is stored as a part of the record.

9. (Original) The method of claim 1, wherein time-synchronization data packets facilitating the time synchronization over the communication medium are time tagged and recorded.

10. (Previously presented) The method of claim 1, wherein existence and configuration of devices producing the digitally encoded information signals to be recorded is recognized automatically based on an applied communication protocol.

11. (Original) The method of claim 1, wherein a health status of the communication medium used to transport a content of the digitally encoded information signals is monitored via at least one of a hardware and software means, and detected problems are time tagged and recorded as a part of the record.

12. (Original) The method of claim 1, wherein a percentage usage of the communication medium used to transport the digitally encoded information signals is monitored via at least one of hardware and software means, and recorded as a part of the record.

13. (Original) The method of claim 1, wherein the digitally encoded information signals are received via a wireless port.

14. (Previously presented) The method of claim 13, wherein a health status of a wireless communication medium used to transport a content of the digitally encoded information signals is monitored via at least one of a hardware and software means, and detected problems are time tagged and recorded as a part of the record.

15. (Original) The method of claim 1, wherein a health status of the corresponding analog transducer is recorded with the analog output signal of the corresponding transducer.

16. (Original) The method of claim 1, wherein the time synchronization of the internal clock is achieved based on the incoming data packets instead of a dedicated time synchronization analog signal.

17. (Previously presented) The method of claim 16, wherein the incoming packets used to synchronize the internal clock share a communication port with the incoming data packets.

18. (Previously presented) The method of claim 1, wherein the memory storage medium is a removable memory storage medium which is removable without disassembling the hosting device in which it is employed.

19. (Original) The method of claim 18, wherein the record of the memory storage medium is preserved for access through a separate reading device.

20. (Original) The method of claim 18, in which the memory storage medium is removable and insertable with the hosting device being powered on.

21. (Previously presented) The method of claim 18, wherein the removable memory storage medium comprises of two or more independent storage units.

22. (Previously presented) The method of claim 18, wherein a recording function of the hosting device are retained during removal and insertion of the removable memory storage medium.

23. (Previously presented) The method of claim 18, wherein the memory storage medium has no part thereof movable relative to any other part thereof.

24. (Previously presented) The method of claim 18, wherein the removable memory storage medium is encrypted and readable only after providing appropriate security information.

25. (Previously presented) The method of claim 18, wherein the removable memory storage medium is internally tested upon insertion and before use thereof.

26. (Original) The method of claim 1, wherein a configuration of the hosting device and stored records are protected from cyber attacks by authentication procedures that utilize wireless access.

27. (Original) The method of claim 26, wherein the authentication is performed with a proximity card, the proximity card absent electrical wires and an internal power source.

28. (Previously presented) The method of claim 1, wherein a configuration of the hosting device is changed with a proximity card, the proximity card absent electrical wires and an internal power source.

29. (Original) The method of claim 1, wherein the hosting device is controlled wirelessly for at least one of configuration changes, record management, and other supported functions.

30. (Original) The method of claim 1, wherein a number of self-tests are performed continuously or periodically in order to monitor integrity of the hosting device.

31. (Original) The method of claim 30, wherein the hosting device is configured to report internal problems absent a power supply connected therewith.

32. (Previously presented) The method of claim 1, wherein the hosting device is capable of initiating communication with one of a higher order system and a device based on pre-defined conditions, the pre-defined conditions include at least one of high memory utilization and self-test error.

33. (Previously presented) The method of claim 1, wherein the hosting device is configured to retrieve the record and change a configuration of the hosting device via at least one of public, proprietary system control and data acquisition, and substation integration protocols.

34. (Previously presented) The method of claim 1, wherein a storing rate for both the plurality of analog output signals and digitally encoded information signals is different for different channels corresponding to different physical inputs and different communication ports.

35. (Previously presented) The method of claim 1, wherein a storing rate for both the plurality of analog output signals and digitally encoded signals is dynamic and controlled via user-definable conditions.

36. (Original) The method of claim 1, wherein the hosting device simultaneously supports a multitude of communication protocols for the digitally encoded information signals over a single or multiple communication ports.

37. (Original) The method of claim 1, wherein the hosting device supports primary and secondary communication ports.

38. (Original) The method of claim 37, further comprising recording the digitally encoded signals separately for the primary and secondary ports.

39. (Original) The method of claim 1, further comprising creating separate records for various groups of the digitally encoded signals based on a logical organization of the communication medium.

40. (Original) The method of claim 1, further comprising sending and receiving a test message intended to monitor at least one of integrity and quality of the communication medium.

41. (Original) The method of claim 40, wherein one of the primary and secondary devices sends and another echoes back the test message, wherein comparison of the sent and echoed messages allows monitoring parameters of the communication medium.

42. (Original) The method of claim 1, further comprising recording and overlaying with at least one of power system signals, selected video and audio signals available as digital packets, and signals related to monitoring electric power system.

43. (Currently amended) An apparatus for recording analog signals and digitally encoded information associated with primary devices of an electric power system and secondary devices associated with the electric power system, the apparatus comprising:

a hosting device configured to perform the steps of:

receiving a plurality of analog output signals from corresponding transducers of the electric power system;

receiving a plurality of ON/OFF status signals from the primary and secondary devices of the electric power system;

receiving at least one of a time-synchronization analog signal from a time synchronization source and a time-synchronization data packet from the time synchronization source over a communication medium;

maintaining an internal clock synchronized with the synchronization source for time synchronization;

sampling and digitizing the plurality of analog output signals to generate digitized analog output signals;

monitoring at least one of a status and a change of status of the plurality of ON/OFF status signals;

receiving digitally encoded information signals originating from the primary and secondary devices as incoming data packets from a substation protection and control communication network via a communication port;

decoding and analyzing the incoming data packets;

analyzing both the digitized analog output signals and digitally encoded information signals using a triggering algorithm; and

a non-volatile memory storage medium in operable communication with the hosting device, the non-volatile memory storage medium storing the digitized analog output signals and digitally encoded information signals together with corresponding timing information in a record as fault and sequence of events records.